Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 2/22/12 at 9:00 a.m.

Objective: Provide advice to the Water Operations Management Team (WOMT) and National Marine Fisheries Service (NMFS) on measures to reduce adverse effects from Delta operations of the Central Valley Project and the State Water Project on salmonids and green sturgeon. DOSS will coordinate the work of other technical teams. DOSS notes and advice can be found at: http://www.swr.noaa.gov/ocap/doss.htm

DWR: Mike Ford, Kevin Reece, Andy Chu, James Gleim, Angela Llaban, Edmund Yu, Dan Yamanaka
FWS: Leigh Bartoo
NMFS: Barbara Rocco, Bruce Oppenheim, Barb Byrne
Reclamation: Josh Israel, Russ Yaworsky
DFG: Bob Fujimura
EPA, **SWRCB, USGS:** not present

Agenda
1. Fish monitoring
2. Current operations
3. Update on acoustic tag workshop
4. Review action items

Action Item [11/15/11]
Evaluate the data from Mill and Deer Creek RSTs, Tisdale, and Knights Landing RSTs and compare the timing of spring-run Chinook salmon migration captured by each data set. **Carry until we get Mill and Deer Creek data overview from DFG**.

Action Item [1/3/12]: Review the DOSS section of the annual review report and provide responses regarding implementation of recommendations. **Carry until after workshops.**

Action Item [1/17/12]: DOSS requests that DFG reconcile the database for hatchery fish that fall within the winter-run size category for this year with the tags that are read from the fish facilities. This can be done with a simple feedback loop from DWR with the tag information. **DFG will report back when reconciled. Delete.**

Action Item [1/17/12]: DWR, Reclamation, NMFS, and DFG will meet to discuss how best to include CWT information in available salvage databases, both going forward and perhaps retrospectively. Bob Fujimura, DFG, agreed to lead this effort and provide a list of what needs to be revised. **Bob reported no action. Carry.**

Action Item [1/31/12]: Reclamation (Israel) will contact Stockton FWS (Kim Webb) to discuss centralization of CWT data. **Josh reported no action. Carry**

Action Item [1/31/12]: DOSS agreed to think about how to classify the ad-clipped salmon that are missing tags and report back to Geir next week. **Addressed. See note below*. Delete.**

*****Llaban (DWR): Fish are initially classified by length and date, and this is revised when more accurate data come in. Llaban will report out to Geir to decide how to classify those with missing tags; however, it is likely that there is no way to do this other than what's already being done.

Action Item [1/31/12]: DWR (Llaban) will work on getting the coded wire tag data from the SWP on a more timely basis, but it might take some time to consolidate the two data sets that are collected by different groups. **No action.**

Fish Monitoring: The following table presents fish monitoring data. Unless otherwise noted, reported sizes are fork length. See: http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm.

Location	Chipps Is. Midwater Trawl	Sacramento Kodiak Trawl	Mossdale Kodiak Trawl	Beach Seines	Knights Landing RST	Tisdale Weir RST
Sample Date	2/14, 17	2/13, 14, 17	2/13, 15, 17	2/14, 16	2/14–2/18	2/15, 17, 18, 19, 20
Total Catch	**17**	**51**	**0**	**423**	**71**	**182**
FR		20		415	69	178
WR					1	
SR				7		1
LFR						
Ad-Clipped Chinook	2					2
DS	14 (60–74 mm; no expression)					
Splittail						
Longfin	1					
SH (ad-clip)		31		1	1	1
SH (wild)						
W. Temp. (avg. °F)	10.9	10.9	11.9	10.6	53.0	48.0
Flows (avg. cfs)					7,202	6,476
Turbidity (avg. NTU)	41.4	27.8	12.9	30.1	24.1	18.4
WR/LFR Avg. CPUE					0.003	0
FR/SR Avg. CPUE					0.262	0.540

Key: FR = Fall run; LFR = Late-fall run; SR = Spring run; WR = Winter run; SH = Steelhead; DS = Delta smelt; LFS = Longfin smelt; SPTL = Splittail, CPUE = catch per unit of effort, ACT = acoustical tag

Fish Salvage Data (2/13–2/21): Reports are also posted at ftp://ftp.delta.dfg.ca.gov/salvage: and you can locate the table under folder "DOSS salvage tables" (you can also try http://www.dfg.ca.gov/delta/apps/salvage/Default.aspx) and click on "salvage FTP site.

Chinook salmon[1]: Winter-run-size ad-clipped Chinook salmon were salvaged at the CVP (weekly expanded salvage = 15) and SWP (weekly expanded salvage = 25). Winter-run-size non-clipped Chinook were salvaged at the CVP (weekly expanded salvage = 14) and SWP (weekly expanded salvage = 6). The water-year (10/1/2011 to present) salvage totals of all races of Chinook salmon at the CVP are 194 ad-clipped (loss = 146) and 68 non-clipped (loss = 50). The water-year salvage totals of all races of Chinook salmon at the SWP are 139 ad-clipped (loss = 622) and 10 non-clipped (loss = 80).

Steelhead: Ad-clipped steelhead were salvaged at the CVP (weekly expanded salvage = 30) and SWP (weekly expanded salvage = 16). Non-clipped steelhead were salvaged at the CVP (weekly expanded salvage = 1) and SWP (weekly expanded salvage = 4). The water-year salvage totals of steelhead at the CVP are 57 ad-clipped and 2 non-clipped. The water-year salvage totals of steelhead at the SWP are 32 ad-clipped and 12 non-clipped. The cumulative total for non-clipped steelhead this water year is 14.

There was an increase or pulse of steelhead that was observed at Knights Landing and the fish facilities this past week reflecting the recent releases from the Nimbus (American River) Hatchery.

Delta smelt: Delta smelt were salvaged at the CVP (weekly expanded salvage = 19), but not at the SWP. The water-year salvage total of delta smelt at the CVP is 66. No delta smelt have been salvaged at the SWP this water year. No larval delta smelt <20 mm FL were reported in larval fish samples from 2/16/2012 through 2/19/2012 at the CVP and from 2/16/2012 through 0900 hours on 2/17/2012 at the SWP.

Longfin smelt: No longfin smelt have been salvaged at either facility this water year. No larval longfin smelt <20 mm FL were reported in larval fish samples from 2/16/2012 through 2/19/2012 at the CVP and from 2/16/2012 through 0900 hours on 2/17/2012 at the SWP.

Splittail: Splittail were salvaged at the SWP (weekly expanded salvage = 22) and CVP (weekly expanded salvage = 17). The water-year salvage total of splittail at the CVP is 211. The water-year salvage total of splittail at the SWP is 3,794.

White sturgeon: No white sturgeon were salvaged at either facility. The water-year salvage total of white sturgeon at the CVP is 64. No white sturgeon have been salvaged at the SWP this water year.

Green sturgeon: No green sturgeon have been salvaged at either facility this water year.

[1] Race of clipped salmon is determined solely by length of the fish at date criteria on date of salvage and should be treated as preliminary and may be subject to change when Reclamation and FWS reports the tag information on race.

RPA Action IV.2.3—Loss Density Trigger: On 2/18, the older juvenile Chinook salmon loss-density trigger (2.50 fish/TAF) based on RPA Action IV.2.3 was met with a preliminary estimate of 2.52 fish/TAF, which requires that exports be reduced to achieve an average net OMR flow of no more negative than -3,500 cfs for a minimum of 5 consecutive days. Salvage activity at both facilities stopped after the trigger was reached. NMFS received notice on 2/21/12 from DFG confirming that the loss density on 2/18 was 2.53 fish/TAF, and advised WOMT that Reclamation and DWR shall reduce exports to achieve an average net OMR flow of no more negative than -3,500 cfs for a minimum of 5 consecutive days. However, NMFS acknowledged that since OMR flows were already less negative than -3,500 cfs, there would not be a need to transition to the lower (less negative) OMR flow requirement, and therefore, 2/21/2012, would be the first day of the 5-day requirement operating to an OMR flow of no more negative than -3,500 cfs. DWR expressed concern that there needed to be an official "start date" for operations indicating that they had met the criteria and complied with the RPA action, and wanted to also clarify that the action is "already in place" for protection of salmonids.

There was discussion on when the action response would begin. The 5-day requirement could begin on 2/19 (date NMFS was first notified by email) or 2/21 (date that loss density was verified by DFG). DOSS agreed to begin on 2/21/12 and continue until the average daily fish density is less than the trigger density for the last 3 days of export reduction (i.e., <2.50 fish/TAF). The DFG salvage data sheet was posted yesterday (2/21/12) and confirmed 2.53 fish/TAF for older juvenile loss density. DWR cautioned that this approach deviates from real-time operations and would be considered an "after the fact" operation change; however, last year, DOSS agreed that if the number was within 0.1 of the criteria, DOSS and the operators would wait for DFG verification before making any operations changes. We already have 1 day of compliance. In an ideal world, the operators would respond immediately; however, in this case, they could begin day 1 on Sunday 2/19/12 because the OMR flows were already at approximately -3,000 cfs. If there had been no confirmation; nothing would have happened in operations. In the past, a 2-day delay was allowed if needed to make an export change. If operations were -5,000 cfs and operators were notified that they had to go to -3,500 cfs, the projects could not begin to achieve that until 2 days after notification because of power scheduling. In this case, operations had to meet outflow requirements for X2, and OMR was already more positive than -3,500 cfs; therefore, the projects were actually already meeting the criteria. The projects still have a few more days of X2 to meet in February; therefore, the OMR flows will likely remain more positive than -3,500 cfs.

There was concern that there was a 2-day delay in changing operations once the fish trigger was met; however, it was noted that OMR flows cannot be changed immediately and it takes 2 days for operators to make the changes even though the intent is to make them as soon as possible to protect the fish that are in the system. The DOSS members discussed this issue last water year during the 3/1/11 conference call and agreed that the 2-day turnaround time was reasonable.

<u>CWT salvage and loss:</u>
The following table presents the salvage and loss of CWT Chinook salmon:
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Release Date	CWT Race	Release Site	Release Type	Confirmed Loss	Number Released	Total Entering Delta	% Loss [1]	First Concern Level	Second Concern Level	Date of First Loss	Date of Last Last
12/16/2011	LF	Battle Creek	Production	92.30	394,700	n/a	0.023	n/a	n/a	1/11/2012	2/17/2012
12/23/2011	LF	Battle Creek	Spring Surrogate	2.92	62,400	n/a	0.005	0.5%	1.0%	1/18/2012	1/31/2012
1/3/2012	LF	Battle Creek	Production	464.42	448,600	n/a	0.104	n/a	n/a	1/19/2012	2/17/2012
1/13/2012	LF	Battle Creek	Spring Surrogate	52.17	80,800	n/a	0.065	0.5%	1.0%	1/31/2012	2/18/2012
1/20/2012	LF	Battle Creek	Spring Surrogate	75.93	20,000	n/a	0.380	n/a	n/a	1/30/2012	2/18/2012
2/9/2012	W	Redding	Production	0.00	194,000	96,525	0.000	0.5%	1.0%	-	-

For Chinook lost 10/1/2011 through 2/20/2012

SWP coded-wire tags read 10/1/2011 through 2/20/2012

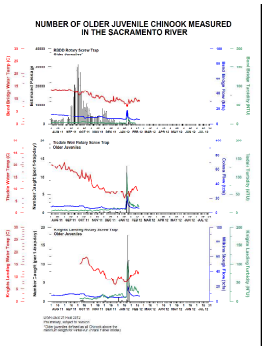
CVP coded-wire tags read 10/1/2011 through 2/20/2012

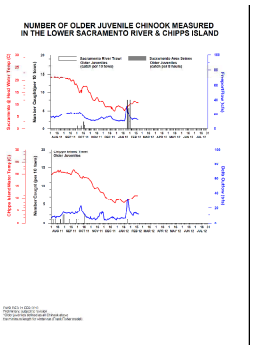
[1]LF % Loss = (Confirmed Loss/Number Released)*100; W % Loss = (Confirmed Loss/Total Entering Delta)*100

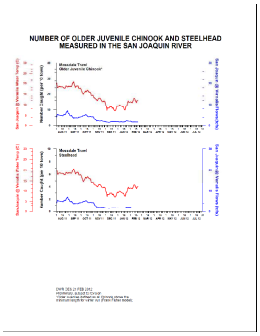
DWR-DES Revised 2/22/2012

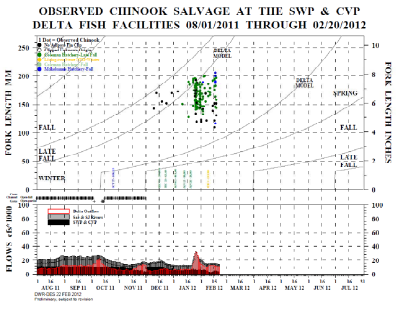
Preliminary, subject to revision

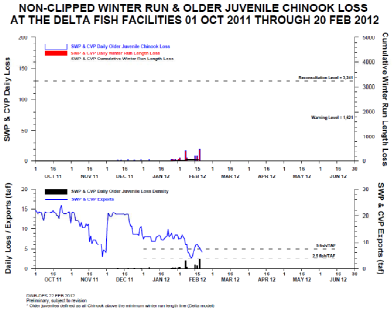
Below are the weekly graphs prepared by DWR (Llaban) for the capture of older juvenile salmon in the Sacramento River and Chipps Island trawls. Also included are graphs of the number of fry/smolts measured at all locations and older juvenile losses from October 2011 through February 21, 2012.











Operations (2/22/12)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	1,000 (will stay	Jones Pumping Plant	1,000 (will go down to 800

	until most of X2 days are met)		beginning this morning)
Reservoir Releases (cfs)			
Feather - Oroville	2,750	American - Nimbus	1,450 (will be held throughout the month)
		Sacramento - Keswick	5,000 (increased this morning from 4,000 cfs to help with Delta outflow)
		Stanislaus - Goodwin	300
Reservoir Storage (in TAF, % of capacity)			
San Luis (SWP)	997 (94)	San Luis (CVP)	821 (85)
Oroville	2,544 (72)	Shasta	3,158 (69)
New Melones	1,966 (81)	Folsom	397 (41)
Delta Operations			
DCC	Closed as of 12/1/11	Sacramento River at Freeport (cfs)	12,200
Outflow Index (cfs)	~11,200	San Joaquin River (cfs) at Vernalis	1,531
Total Delta Inflow (cfs)	14,397	OMR (daily) (CDEC) (cfs)	
Water Temperature (°F)		OMR 5 day (CDEC) (cfs)	-2,867
X2 (km)	72	OMR 14 day (CDEC) (cfs)	-2,336
E/I (%)	16.7 (3-d avg.)		

Delta Conditions: Balanced**.**

Joint Stipulation

Condition 7: It was pointed out that the joint stipulation states that although RPA action IV.2.3 is not provided for in the agreement, the parties will continue discussions to develop a monitoring-based trigger or other real-time operations approach that would modify the current January 1 onset of Action IV.2.3. To this end, it might require a subcommittee to address this requirement so as to not allow this to go unaddressed. It was agreed to put this on the DOSS agenda in mid-May.

Condition 8: In addition, the joint stipulation stated that by June 2012, Reclamation will submit to NMFS for review a list of possible habitat restoration projects to improve survival of steelhead migrating out of the San Joaquin basin. The Implementing Management Team met on 2/8/12 and agreed that DWR and Reclamation will confer with DFG in compiling this list before June.

OMR Technical Memo: Information on the latest data from the acoustic-tag study and plans for more studies in 2012 will be sent out by Byrne (NMFS). DWR has rerun the various DSM2 scenarios and has improved the flux definitions to fully capture particles moving into south Delta channels from up- and downstream. Fluxes are higher into those south Delta channels under these new scenarios; these were missed in the old definitions and are now captured. DOSS has not heard how those change the different operations scenarios but are not expecting any significant changes in the relative effect of OMR.

There was a question about what information models such as DSM2 (Hydro or PTM modules) or DPM might provide DOSS for April and May operations. DSM2 Hydro or PTM runs can be

used to check how hydrodynamic conditions and particle fates respond to OMR changes. It's expected that new DSM2 runs will be performed during April and May based on forecasted hydrology. PTM results show that at the lowest Vernalis flows of 1,500 cfs, OMR has little effect on the fraction of particles that reach Chipps, although other conditions (e.g., hydrodynamics in south-Delta channels) may still be sensitive to OMR.

The draft technical memo is due to NMFS management on March 1, 2012, and there won't be much flexibility for revisions after that date. The planning committee includes several DOSS members; however, Byrne will try to get a draft out to the entire DOSS group next week before it goes to management for review. Also, those interested could join the planning committee call next week as well to review the contents of the draft. Because of time constraints, those interested in reviewing the draft memo were encouraged to participate in the drafting committee.

Smelt Working Group (SWG) update: The SWG met on 2/21/12 and had updated survey information. Since delta smelt are favorably distributed downstream of the Delta, or at the confluence—there is no need for additional operations changes. There were some spent females captured in the Kodiak trawls, which required RPA action 3 of the FWS BiOp to make weekly recommendations to protect juveniles; however, there is still no need to make any changes as current operations are already protecting juveniles. The SWG was concerned about the low level of delta smelt in the salvage. Kodiak trawl information is posted on the DFG website. Longfin: because of the favorable distribution of longfin smelt, the current -2,300 cfs OMR flow would be protective of larval entrainment at the Delta pumps.

DOSS advice to WOMT and NMFS: Start compliance with NMFS RPA action IV.2.3 on 2/21/12, which requires no more negative than -3,500 cfs OMR flows until 2/25/12. If the older juvenile loss density is <2.5 fish/TAF combined for the last 3 days, the OMR flows may be relaxed to no more negative than -5,000 cfs on 2/26/12.

Next Meeting: The next DOSS conference call will be on 2/28/12 at 9:00 a.m.